

IN THE CLAIMS:

Claim 1 (original) A communication device comprising:

a sub-rack unit comprising:

a back wiring board having first connectors arranged in lines thereon; and

a frame plate including vertical ribs and placed on said back wiring board so that the vertical ribs separate the lines of the first connectors; and

a plurality of plug-in units each comprising:

a printed board including top and bottom sides, and parallel first and second sides perpendicular to the top and bottom sides, said printed board having second connectors provided on the first side thereof;

a metal case including top and bottom faces, and parallel first and second side faces perpendicular to the top and bottom faces so as to cover said printed board; and

first and second spring members,

wherein each of said plug-in units is mounted in said sub-rack unit with the first and second connectors being connected so that the first and second side faces of said metal case are pressed outward against the vertical ribs of said frame plate by resilient forces generated by elastic deformation of said first and second spring members, respectively.

Claim 2 (original) The communication device as claimed in claim 1, wherein:

each of the plug-in units further comprises:

a front board member attached to the second side of said printed board;

first and second arm members extending horizontally from top and bottom end portions of said front member, respectively; and

first and second pillar members provided vertically to oppose each other between said first and second arm members; and

said first and second spring members are attached to inner faces of the first and second side faces of said metal case so as to contact said first and second pillar members, respectively.

Claim 3 (original) The communication device as claimed in claim 1, wherein said printed board is supported so as to be displaceable in a rotational direction around the second side of said printed board.

Claim 4 (original) The communication device as claimed in claim 1, wherein:
each of said plug-in devices further comprises a shield member provided on one end portion of each of the top and bottom faces of said metal case so that said shield members elastically deform to be pressed against said frame plate when each of said plug-in units is mounted in said sub-rack unit.

Claim 5 (original) The communication device as claimed in claim 1, wherein:
each of said plug-in units further comprises first and second slider members provided on the top and bottom faces of said case metal, respectively, the second slider member having a downward convex part formed on one end portion thereof, the one end portion being in a reverse direction to said sub-rack unit when each of said plug-in units is inserted thereinto;

said sub-rack unit further comprises a pair of first and second guide rail parts for guiding each of said plug-in units to be inserted into said sub-rack unit, the second guide rail part having a notch formed on one end portion thereof on an insertion side from which each of said plug-in units is inserted into the sub-rack unit; and

each of said plug-in units is mounted in the sub-rack unit in a required position when inserted into the sub-rack unit with said first and second slider members being guided by said first and second guide rail parts, respectively, until the downward convex part engages with the notch, and is prevented from being mounted in the sub-rack unit by a contact of the downward convex part with one end of the first guide rail part on the insertion side when inserted upside down into the sub-rack unit.

Claim 6 (original) The communication device as claimed in claim 2, wherein said first and second pillar members include first and second portions made of an insulating material, respectively, so that said first and second spring members contact said first and second portions, respectively.

Claim 7 (original) The communication device as claimed in claim 2, wherein:

said printed board has first and second notch parts formed in positions close to the first side thereof on the top and bottom sides thereof, respectively;

said first and second arm members have first and second pins fitted into said first and second notch parts, respectively; and

said front member has first and second card lever assemblies provided on the top and bottom end portions thereof, respectively, so that operations of said first and second card lever assemblies cause said first and second pins to press said first and second notch parts so as to exert forces to press each of the plug-in units into the sub-rack unit on the first and second notch parts, respectively.

Claim 8 (currently amended) A plug-in unit comprising:

a printed board;

a metal case including top and bottom faces, and parallel first and second side faces perpendicular to the top and bottom faces so as to cover said printed board, the first and second side faces each having an open end; and

first and second spring members that elastically deform in response to inward deformation of the open ends of the first and second side faces of said metal case so as to press outward the open ends of the first and second side faces, respectively, by resilient force thereof,

wherein said metal case further comprises first and second pillar members provided vertically to oppose each other between the top and bottom faces,

said first and second spring members are attached to inner faces of the first and second side faces of said metal case so as to contact said first and second pillar members, respectively,
and

the first spring member is compressible between the inner face of the first side face of said metal case and said first pillar member, and the second spring member is compressible between the inner face of the second side face of said metal case and said second pillar member.

Claims 9 - 11 (canceled)

Claim 12 (currently amended) A communication device comprising:

a sub-rack unit comprising:

a back wiring board having connectors; and

first and second guide rail parts being attached to a top side and a lower portion of said sub-rack unit, respectively;

a plurality of plug-in units being inserted along the first and second guide rail parts into said sub-rack unit to be plugged into the connectors of said sub-rack unit;

a member for forming an air reservoir room formed under the second guide rail parts; and

a plurality of motor-fan units each having a motor fan and a lid member, said motor-fan units being detachably plugged into said sub-rack unit under said member for forming the air reservoir room so that said lid members are pressed against a bottom face of said member for forming the air reservoir room so as to sealably integrate the motor-fan units and said member for forming an air reservoir room,

wherein each of said lid members is provided on the motor fan, and includes a projection part formed on an end portion thereof, the end portion being in a direction in which each of said motor-fan units is plugged into said sub-rack unit, the projection part having a top face tilt in said direction.

Claim 13 (currently amended) The communication device as claimed in claim 12, wherein:

~~each of said lid members is provided on the motor fan, and includes a packing around the motor fan and a projection part formed on an end portion thereof, the end portion being in a direction in which each of said motor fan units is plugged into said sub-rack unit, the projection part having a top face tilt in said direction; and~~

the packing is compressed to allow the lid member to be pressed against the bottom face of said member for forming the air reservoir room when each of said motor-fan units is plugged into said sub-rack unit.

Claim 14 (previously amended) The communication device as claimed in claim 12, further comprising:

a filler plug-in unit having the same size and resistance to airflow as each of said plug-in units, the filler plug-in unit being filled into a space left in said sub-rack unit.

Claim 15 (canceled)

Claim 16 (canceled)

Claim 17 (previously introduced) The plug-in unit as claimed in claim 8, wherein each of said first and second spring members is formed of a plurality of leaf springs.